UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/930,152	08/16/2001	Christophe Boyer	PET-1946	1470

23599 7590 02/23/2006

MILLEN, WHITE, ZELANO & BRANIGAN, P.C.
2200 CLARENDON BLVD.
SUITE 1400
ARLINGTON, VA 22201

EXAMINER	
LEUNG, JENNIFER A	

ART UNIT	PAPER NUMBER
1764	

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/930,152	BOYER ET AL.	
	Examiner	Art Unit	
	Jennifer A. Leung	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 December 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,17-19 and 21-30* is/are pending in the application.

4a) Of the above claim(s) *23* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,17-19,21,22 and 24-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1,2,17-19 and 21-30* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 April 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's amendment submitted on December 5, 2005 has been received and carefully considered. The changes made to the Specification and Drawings are acceptable. Claims 3-16 and 20 are cancelled. Claims 23 is withdrawn from further consideration. Claims 24-30 are new. Claims 1, 2, 17-19, 21, 22 and 24-30 are currently under consideration.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1, 2, 17-19, 21, 22 and 24-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, it is unclear as to the structural limitation applicant is attempting to recite by, "*said plate* preventing flow of a liquid fraction of the fluid or fluid mixture originating from the upper granular bed through said conduits," in lines 14-15, because it appears that applicant is describing the *circular plate **207*** in FIG. 3 as "said plate". However, the antecedent basis for "said plate" is provided by the limitation of, "said device further comprising conduits (206)... traversing the chamber in a fluid tight manner, the height of which is greater than the maximum height reached by liquid forming above *a plate* on the upper portion of the chamber," in lines 10-14, wherein it appears that applicant is describing the *liquid level plate **200*** in FIG. 3 as "a plate".

Regarding claims 2 and 28, it is unclear as to the additional structural limitation applicant is attempting to recite by, "said secondary fluid is a gas phase at least partially comprised by hydrogen" because the "secondary fluid" is not considered an element of the apparatus.

Regarding claim 19, it is unclear as to the structural limitation applicant is attempting to recite by, "*said plate* preventing flow of a liquid fraction of the fluid or fluid mixture originating from the upper granular bed through said conduits," in line 18-19, because it appears that applicant is describing the *circular plate **207*** in FIG. 3 as "said plate". However, the antecedent basis for "said plate" is provided by the limitation of, "said device further comprising conduits (206)... traversing the chamber in a fluid tight manner, the height of which is greater than the maximum height reached by liquid forming above *a plate* on the upper portion of the chamber," in line 15-18, wherein it appears that applicant is describing the *liquid level plate **200*** in FIG. 3 as "a plate".

Regarding claim 24, it is unclear as to the structural limitation applicant is attempting to recite by, "a plate for the obtention of a liquid level," (line 7) because "obtention" is not a word found in the English language.

Regarding claim 25, it is unclear as to the structural limitation applicant is attempting to recite by, "a plate (220) for the obtention of a liquid level," (line 6) because "obtention" is not a word found in the English language.

Regarding claim 26, it is unclear as to the structural limitation applicant is attempting to recite by, "*said plate* preventing flow of a liquid fraction of the fluid or fluid mixture originating from the upper granular bed through said conduits," in lines 10-11, because it appears that applicant is describing the *circular plate **207*** in FIG. 3 as "said plate". However, the antecedent

basis for "said plate" is provided by the limitation of, "said device further comprising conduits (206)... traversing the chamber in a fluid tight manner, the height of which is greater than the maximum height reached by liquid forming above *a plate* on the upper portion of the chamber," in lines 7-10, wherein it appears that applicant is describing the *liquid level plate **200*** in FIG. 3 as "a plate".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 19, 21, 22 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Alcock (US 3,880,961).

Regarding claims 19 and 22, as best understood, Alcock (FIG. 1-4; column 3, line 25 to column 4, line 33) discloses a fixed bed reactor comprising:

at least one upper bed of granular solids (i.e., a catalyst bed, not shown, located above the layer of ceramic balls **9**);

at least one lower bed of granular solids (i.e., a catalyst bed, not shown, located below the layer of ceramic balls **27**);

at least one device located between the upper and lower granular beds, said device comprising an injection chamber (i.e., defined by the space between support tray **8** and distribution tray **6**); contact apparatus (i.e., a quench box **5**); and distribution apparatus (i.e., chimneys **23** with cowls **24**); said lower bed being located downstream of the fluids;

at least one separate line for injecting secondary fluid into the injection chamber (i.e., via pipe **10** and injection ring **4**), the separate line being substantially perpendicular to the vertical axis of the reactor (i.e., pipe **10** passes substantially perpendicularly through a gas-tight flange in the reactor wall **2**); and

said device further comprising conduits traversing the chamber in a fluid tight manner (i.e., pipes **29**, extending from one catalyst bed to the next, through the quench box and distribution tray but sealed from them), the height of which is greater than the maximum height reached by liquid forming above a plate on the upper portion of the chamber (i.e., liquid collecting on roof **12**).

Regarding claim 21, the apparatus comprises means for circulating liquid and gas phases through the granular bed or beds in a co-current descending manner (i.e., operating under "downflow"; see column 4, lines 10-23).

Regarding claim 26, as best understood, Alcock (FIG. 1-4; column 3, line 25 to column 4, line 33) discloses a device comprising: an injection chamber (i.e., defined by the space between support tray **8** and distribution tray **6**); contact apparatus (i.e., a quench box **5**); and distribution apparatus (i.e., chimneys **23** with cowls **24**); said device further comprising conduits traversing the chamber in a fluid tight manner (i.e., pipes **29**, extending from one catalyst bed to the next, through the quench box and distribution tray but sealed from them), the height of which is greater than the maximum height reached by liquid forming above a plate on the upper portion of the chamber (i.e., liquid collecting on roof **12**).

Instant claims 19, 21, 22 and 26 structurally read on the apparatus of Alcock.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 25, 27, 28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pappas et al. (US 3,091,586) in view of Billingham et al. (EP 0 782 877).

Regarding claims 25 and 30, Pappas et al. (see figure) discloses a device comprising: a chamber (i.e., an H_2 treat gas receiving compartment, defined between plates **7** and **12**, or between plates **8** and **13**; column 2, lines 8-19) crossed in a fluid tight manner by a first series of mixer channels having a substantially constant diameter along their axial length (i.e., liquid downflow pipes **11**), the upper part of the chamber forming a plate (i.e., plate **7** or **8**) for retaining liquid above this plate, and a second series of conduits (i.e., risers **40**) for injecting secondary gas from said chamber into the liquid on plate **7** or **8**.

Pappas et al., however, is silent as to the mixer channels **11** being pierced with orifices in the upper portion that is immersed in the liquid.

Billingham et al. (FIG. 6) teaches the provision of orifices in the upper portion of a mixer channel (i.e., the weir which defines passage **622**, "may have orifices in its wall to allow liquid to enter laterally and promote mixing," see column 6, line 50 to column 7, line 5).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to provide orifices in the upper portion of the mixer channels **11** in the apparatus of Pappas et al., on the basis of suitability for the intended use thereof, because the orifices allow for liquid to enter laterally into the mixer channels, thereby promoting mixing, as taught by Billingham et al.

Regarding claim 27, Pappas et al. discloses that a distance (see Figure) is provided between the bottom end of the tubes or mixer channels **11** and the upper surface of the lower bed (i.e., the upper surfaces of beds **22** or **23**), and that a plurality of tubes or mixer channels **11** is provided for each plate **12**, **13**. However, Pappas et al. is silent as to the distance between the bottom end of tubes **11** and the upper surface of the lower beds **22**, **23** being specifically 0 to 50 mm, with 0 excluded. Pappas et al. is further silent as to the density of conduits **11** being more than 80 per square meter. In any event, it would have been obvious for one of ordinary skill in the art at the time the invention was made to select the recited distance and the recited density for the conduits **11** in the apparatus of Pappas et al., on the basis of suitability for the intended use and absent showing any unexpected results thereof, because changes in size merely involves ordinary skill in the art, the duplication of parts merely involves ordinary skill in the art, and it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art, *In re Aller, 105 USPQ 233.*

Regarding claim 28, In any event, Pappas et al. discloses that the secondary fluid is a gas phase at least partially comprised of hydrogen (i.e., H_2 gas received in the compartments via lines **14** and **15**).

5. Claims 1, 2, 17-19, 21, 22, 24, 26 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forster et al. (US 3,895,919) in view of Alcock (US 3,880,961).

Regarding claim 1, Forster et al. (FIG. 1; column 3, line 4 to column 4, line 25) discloses a device comprising: an injection chamber (i.e., a chamber as defined between the upper and lower tube plates **8**, for injecting a quench gas **11**); contact apparatus (i.e., the upper portion of tubes **9**, above orifice plate **4**); and distribution apparatus (i.e., the lower portion of tubes **9**, below orifice plate **4**); wherein said contact and distribution apparatuses are conduits (i.e., tubes **9**) with a substantially constant diameter along their axial length traversing the injection chamber and pierced with orifices (i.e., openings **10**) over their lateral wall; and wherein said device comprises a plate on the upper portion of the chamber (i.e., the upper tube plate **8**), capable of retaining a liquid fraction of the fluid or fluid mixture origination from an upper granular bed (i.e., the liquid portion of the reaction stream from catalyst layer **1**).

Forster et al., however, is silent as to the device further comprising conduits that traverse the chamber in a fluid tight manner, the height of which is greater than the maximum height reached by liquid forming above the plate **8** on the upper portion of the chamber.

Alcock (FIG. 1-4; column 3, line 25 to column 4, line 33) teaches a device comprising: an injection chamber (i.e., defined between support grid **8** and distribution tray **6**); contact apparatus (i.e., quench box **5**); and distribution apparatus (i.e., chimneys **23**). In particular, Alcock teaches the device further comprising conduits (i.e., pipes **29**) that traverse the chamber

in a fluid tight manner, the height of which is greater than the maximum height reached by liquid forming above a plate on the upper portion of the chamber (i.e., liquid collects on roof **12**).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to provide conduits that traverse the chamber in a fluid tight manner, the height of which is greater than the maximum height reached by liquid forming above the plate on the upper portion of the chamber, in the apparatus of Forster et al., on the basis of suitability for the intended use, because the conduits allow for all the catalyst beds to be discharged from the base of the reactor (said conduits further permitting a small proportion of the reactants to by-pass the contact and distribution apparatus), as taught by Alcock (see column 4, lines 30-33)

Regarding claim 2, the secondary fluid is not considered an element of the apparatus and therefore the device of Forster et al. structurally meets the claims. In any event, the device would inherently be capable of utilizing a gas phase, such as hydrogen gas, for the secondary fluid, as evidenced by the device being used for supplying a quench **11** of the gas phase.

Regarding claim 17, Forster et al. discloses the contact and distribution means (i.e., tubes **9**) extend below the chamber by a given distance (see FIG. 1, wherein the bottom of tubes **9** extend a distance below the lower tube plate **8**).

Regarding claim 18, [see the rejection of claim 24 below, first, since claim 18 depends from claim 24] Forster et al. discloses that a distance (see FIG. 1) exists between the bottom of the conduits **9** and the upper surface of the lower bed **6**, and that a plurality of conduits **9** is provided in each device. Forster et al., however, is silent as to the distance between the bottom end of tubes **9** and the upper surface of the lower bed **6** being specifically 0 to 50 mm, with 0 excluded. Forster et al. is further silent as to the density of conduits **9** being more than 80 per

square meter. In any event, it would have been obvious for one of ordinary skill in the art at the time the invention was made to select the recited distance and the recited density for the conduits **9** in the apparatus of Forster et al., on the basis of suitability for the intended use and absent showing any unexpected results thereof, because changes in size merely involves ordinary skill in the art, the duplication of parts merely involves ordinary skill in the art, and it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art, *In re Aller, 105 USPQ 233.*

Regarding claims 19 and 22, as best understood, Forster et al. (FIG. 1; column 3, line 4 to column 4, line 25) discloses a fixed bed reactor comprising:

at least one upper bed of granular solids (i.e., catalyst layer **1**);

at least one lower bed of granular solids (i.e., catalyst layer **6**);

at least one device located between the upper and lower granular beds, said device comprising an injection chamber (i.e., defined between the upper and lower tube plates **8**, for injecting a quench gas **11**); contact apparatus (i.e., the upper portion of tubes **9**, above orifice plate **4**); and distribution apparatus (i.e., the lower portion of tubes **9**, below orifice plate **4**); said lower bed **6** being located downstream of the fluids;

at least one separate line (i.e., feed pipe **11**) for injecting secondary fluid (i.e., quench gas) into the injection chamber; and

a plate (i.e., upper tube plate **8**) on the upper portion of the chamber, capable of retaining a liquid fraction of the fluid or fluid mixture originating from the upper granular bed **1**.

As shown in FIG. 1, the at least one separate line **11** is substantially *parallel* to the vertical axis of the reactor. Although Forster is silent as to said line being substantially

perpendicular to the vertical axis of the reactor, it would have been obvious for one of ordinary skill in the art at the time the invention was made to select such a configuration for supplying the quench gas via the separate line in the apparatus of Forster et al., on the basis of suitability for the intended use thereof, because the Examiner takes Official Notice that rearranging the positioning of the feed pipe merely involves routine skill in the art.

Forster et al. is silent as to the device further comprising conduits traversing the chamber in a fluid tight manner, the height of which is greater than the maximum height reached by liquid forming above the plate **8** on the upper portion of the chamber.

Alcock (FIG. 1-4; column 3, line 25 to column 4, line 33) teaches a device comprising: an injection chamber (i.e., defined between support grid **8** and distribution tray **6**); contact apparatus (i.e., quench box **5**); and distribution apparatus (i.e., chimneys **23**). In particular, Alcock teaches the device further comprising conduits that traverse the chamber in a liquid tight manner (i.e., pipes **29**, extending from one catalyst bed to the next, through the quench box and distribution tray but sealed from them), the height of which is greater than the maximum height reached by liquid forming above a plate on the upper portion of the chamber (i.e., liquid collects on roof **12**).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to provide conduits that traverse the chamber in a fluid tight manner, the height of which is greater than the maximum height reached by liquid forming above the plate on the upper portion of the chamber, in the apparatus of Forster et al., on the basis of suitability for the intended use, because the conduits allow for all the catalyst beds to be discharged from the base

of the reactor (said conduits further permitting a small proportion of the reactants to by-pass the contact and distribution apparatus), as taught by Alcock (see column 4, lines 30-33)

Regarding claim 21, Forster et al. discloses means for circulating liquid and gas phases through the granular bed or beds **1,6** in a co-current descending manner (see FIG. 1, wherein the downward flow of liquid and gas phases is indicated by directional arrows).

Regarding claims 24 and 29, Forster et al. (FIG. 1; column 3, line 4 to column 4, line 25) discloses a device comprising:

a chamber (i.e., defined between the upper and lower tube plates **8**, for injecting a quench gas **11**) crossed by a first series of conduits having a substantially constant diameter along their axial length and pierced with orifices over their lateral wall (i.e., tubes **9**, with openings **10**); the upper part of the chamber forming a plate (i.e., the upper plate **8**) capable of retaining a liquid fraction of the fluid or fluid mixture origination from an upper granular bed (i.e., the liquid portion of the reaction stream from catalyst layer **1**).

Forster et al., however, is silent as to the device further comprising a second series of conduits that cross the chamber in a liquid tight manner, the height of the conduits above this plate being higher than the maximum value of the liquid level, so as to allow gas originating from the upper bed to be injected into the lower bed.

Alcock (FIG. 1-4; column 3, line 25 to column 4, line 33) teaches a device comprising: an injection chamber (i.e., defined between support grid **8** and distribution tray **6**); contact apparatus (i.e., quench box **5**); and distribution apparatus (i.e., chimneys **23**). In particular, Alcock teaches the device further comprising conduits that traverse the chamber in a liquid tight manner (i.e., pipes **29**, extending from one catalyst bed to the next, through the quench box and

distribution tray but sealed from them), the height of which is greater than the maximum height reached by liquid forming above a plate on the upper portion of the chamber (i.e., liquid collects on roof **12**).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the recited second series of conduits in the apparatus of Forster et al., on the basis of suitability for the intended use, because the conduits allow for all the catalyst beds to be discharged from the base of the reactor (said conduits further permitting a small proportion of the reactants to by-pass the contact and distribution apparatus), as taught by Alcock (see column 4, lines 30-33)

Regarding claim 26, Forster et al. (FIG. 1; column 3, line 4 to column 4, line 25) discloses a device comprising: an injection chamber (i.e., a chamber as defined between the upper and lower tube plates **8**, for injecting a quench gas **11**); contact apparatus (i.e., the upper portion of tubes **9**, above orifice plate **4**); and distribution apparatus (i.e., the lower portion of tubes **9**, below orifice plate **4**); wherein said device comprises a plate on the upper portion of the chamber (i.e., the upper tube plate **8**), capable of retaining a liquid fraction of the fluid or fluid mixture origination from an upper granular bed (i.e., the liquid portion of the reaction stream from catalyst layer **1**).

Forster et al., however, is silent as to the device further comprising conduits traversing the chamber in a fluid tight manner, the height of which is greater than the maximum height reached by liquid forming above the plate **8** on the upper portion of the chamber.

Alcock (FIG. 1-4; column 3, line 25 to column 4, line 33) teaches a device comprising: an injection chamber (i.e., defined between support grid **8** and distribution tray **6**); contact

apparatus (i.e., quench box **5**); and distribution apparatus (i.e., chimneys **23**). In particular, Alcock teaches the device further comprising conduits that traverse the chamber in a liquid tight manner (i.e., pipes **29**, extending from one catalyst bed to the next, through the quench box and distribution tray but sealed from them), the height of which is greater than the maximum height reached by liquid forming above a plate on the upper portion of the chamber (i.e., liquid collects on roof **12**).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to provide conduits that traverse the chamber in a fluid tight manner, the height of which is greater than the maximum height reached by liquid forming above the plate on the upper portion of the chamber, in the apparatus of Forster et al., on the basis of suitability for the intended use, because the conduits allow for all the catalyst beds to be discharged from the base of the reactor (said conduits further permitting a small proportion of the reactants to by-pass the contact and distribution apparatus), as taught by Alcock (see column 4, lines 30-33)

Response to Arguments

6. Applicant's arguments with respect to claims 1, 2, 17-19, 21, 22 and 24-30 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

7. The indicated allowability of claim 14 in the previous Office Action is withdrawn in view of the newly discovered prior art references, stated in the rejections above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Leung whose telephone number is (571) 272-1449. The examiner can normally be reached on 9:30 am - 5:30 pm Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jennifer A. Leung
February 21, 2006

Hien Tran

HIEN TRAN
PRIMARY EXAMINER